

ASSIGNMENT 4

Textbook Assignment: "Aerial Photography." Pages 4-2 through 4-32.

Learning Objective (continued):
Identify the types of aerial
photography.

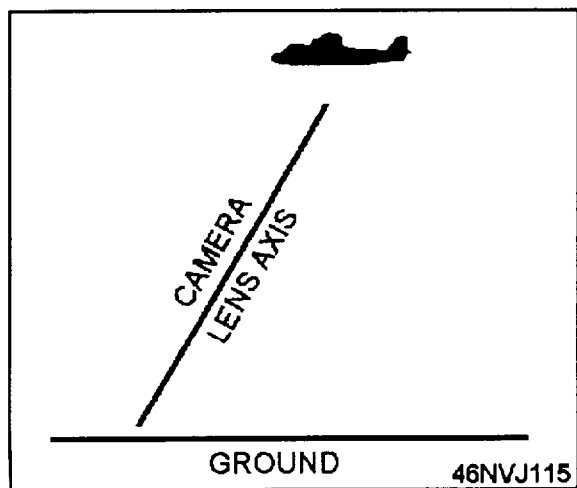


Figure 4A.

IN ANSWERING QUESTIONS 4-1 AND 4-2, REFER
TO FIGURE 4A.

- 4-1. What is the approximate camera depression angle?
1. 60 degrees
 2. 45 degrees
 3. 20 degrees
 4. 0 degrees
- 4-2. What is the approximate tilt angle?
1. 0 degrees
 2. 30 degrees
 3. 45 degrees
 4. 65 degrees
- 4-3. What aerial photograph includes the horizon in the image?
1. Vertical
 2. Low oblique
 3. High oblique
- 4-4. What aerial photograph is used for orientation purposes?
1. High oblique
 2. Low oblique
 3. Vertical
 4. Air-to-air
- 4-5. High-oblique photographs are made from high altitudes, while low-oblique photographs are made from low altitudes.
1. True
 2. False
- 4-6. What type of aerial photography should be made of a small target when only one print is required?
1. Stereo
 2. Mosaic
 3. Strip
 4. Pinpoint
- 4-7. What type of aerial photography should be used to make a series of overlapping photographs of a long, narrow highway?
1. Stereo
 2. Mosaic
 3. Strip
 4. Pinpoint
- 4-8. What minimum number of views is required to produce a stereo effect from aerial photographs?
1. One
 2. Two
 3. Three
 4. Four
- 4-9. One large photograph composed of several overlapping strips pieced together is known as what type of aerial photography?
1. Stereo
 2. Mosaic
 3. Strip
 4. Pinpoint
- 4-10. Two photographs mounted and ready for stereo viewing are known by what term?
1. Stereo
 2. Stereopair
 3. Stereogram
 4. Stereoset

- 4-12. What type of aerial photography is used to make maps or charts?
1. Reconnaissance
 2. Intelligence
 3. Cartographic
 4. Mosaic

Learning Objective: Recognize applications of TARPS.

QUESTIONS 4-13 THROUGH 4-19 INVOLVE TARPS.

- 4-13. It is designed for use with what type of aircraft?

1. P-3
2. C-130
3. F-18
4. F-14

- 4-14. What number of photographic sensors are used in a full configuration?

1. One
2. Two
3. Three
4. Four

- 4-15. What person controls camera operation?

1. The Photographer's Mate
2. The pilot
3. The naval flight officer
4. The aircrewman

- 4-16. The panoramic camera is in what area of the pod?

1. Center
2. Front
3. Rear
- 4.

- 4-17. The frame camera is capable of what number of positions?

1. One
2. Two
3. Three
4. Four

- 4-18. The infrared reconnaissance set is in what location?

1. Front
2. Center
3. Rear

- 4-19. What official normally originates the requirement for EEI reconnaissance?

1. The Commander, Naval Intelligence
2. The Secretary of the Navy
3. The Director of Special intelligence
4. The Task Force Commander

Learning Objective: Identify film and filter combinations used for aerial photography.

- 4-20. What type of aerial camera is designated KE?

1. Reconnaissance
2. Mapping
3. Scope recording
4. Still picture

- 4-21. What weather phenomena causes haze by concentrating and trapping particles in the air?

1. Temperature inversion
2. Thermal shimmer
3. Thermal convection

- 4-22. What photographic filter is most effective for cutting through haze?

1. Blue
2. Green
3. Red
4. Yellow

- 4-23. What type of film reproduces the most ground detail through haze?

1. Tech. Pan
2. Infrared
3. Kodacolor
4. Ektachrome

- 4-24. While viewing a black-and-white aerial photograph, you notice the vegetation in the image appears white. What is the most reasonable explanation for this occurrence?

1. Vegetation always appears white in black-and-white aerial images
2. Heavy haze existed when the photographs were taken and prevented green light from reaching the camera
3. Color film was used to make the pictures, and it was developed in a black-and-white developer
4. Infrared film was used to make the images

- 4-25. What color filter should you use to expose IR black-and-white film?
1. Red
 2. Green
 3. Blue
 4. Yellow
- 4-26. What color filter should you use to expose color IR film?
1. Red
 2. Green
 3. Blue
 4. Yellow
- 4-27. You should NOT develop Kodak Ektachrome film in which of the following processes?
1. E-6
 2. ME-4
 3. EAR-5
 4. E-4
- 4-28. What color filters are used to control haze in aerial photography?
1. Green and blue
 2. Red and green
 3. Blue and yellow
 4. Yellow and red
- 4-29. In black-and-white aerial photography, which of the following filters provides the greatest haze penetration?
1. No. 8
 2. No. 15
 3. No. 25
 4. No. 2B

Learning Objective: Recognize procedures used for taking aerial photographs.

- 4-30. You are taking a low-oblique aerial photograph from a high altitude. What is the best method for determining your camera exposure setting?
1. Take a light meter reading from the ground before boarding the aircraft and use this setting
 2. Use the substitution method by using a light meter reading from a gray aircraft engine or wing
 3. Take an air-to-ground light meter reading and use this setting
 4. Set the aperture to f/5.6 and do not vary from this setting

- 4-31. You are using a map with a scale of 1:15,000. Therefore, 1 inch on the map represents what number of feet on the ground?
1. 1,250
 2. 5,000
 3. 7,500
 4. 15,000
- 4-32. What is the scale of an image shot from an altitude of 10,000 feet with a camera having a 3-inch focal-length lens?
1. 1:10,000
 2. 1:20,000
 3. 1:30,000
 4. 1:40,000
- 4-33. You should have what percentage of overlap between exposures when taking aerial photographs for a strip?
1. 20%
 2. 40%
 3. 60%
 4. 80%
- 4-34. When overlapping aerial photographs for a mosaic map, you should use what section of each photograph?
1. The center 40 percent
 2. The center 60 percent
 3. The outer 40 percent
 4. The outer 60 percent
- 4-35. When you are making mosaic maps, what is the side lap between each strip?

1. 20 percent
2. 40 percent
3. 60 percent
4. 80 percent

Learning Objective: Demonstrate the calculations necessary for an aerial mapping mission.

IN ANSWERING QUESTIONS 4-36 THROUGH 4-48, USE THE FOLLOWING INFORMATION:

- a. An area to be mapped photographically is 15 nautical miles north and south by 25 nautical miles east and west.
- b. Forward overlap required is 60 percent; side lap 40 percent.
- c. Photography scale is 1:17,000.

- d. Camera lens focal length is 7 inches; film format is 4.5 by 4.5 inches.
- e. Aircraft airspeed is 320 knots. There is no wind.
- f. Ground coverage per shot is 6,400 feet.
- g. Scale of mission planning chart is 1:40,500.
- 4-36. What altitude is required for this mapping mission?
1. 23,800 feet
 2. 15,950 feet
 3. 10,000 feet
 4. 5,950 feet
- 4-37. At the required scale, 1 inch on the negative represents what number of feet on the ground?
1. 313 feet
 2. 1,417 feet
 3. 3,750 feet
 4. 9,955 feet
- 4-38. The image of a building on the negative measures 1.75 inches long. What is the actual length of the building?
1. 1,452 feet
 2. 2,489 feet
 3. 3,750 feet
 4. 4,800 feet
- 4-39. With the required overlap, what is the GGF?
1. 640 feet
 2. 1,280 feet
 3. 2,560 feet
 4. 5,120 feet
- 4-40. With the required overlap, what is the GGS?
1. 1,840 feet
 2. 2,840 feet
 3. 3,840 feet
 4. 4,840 feet
- 4-41. In what direction should the aircraft fly?
1. North only
 2. North or south
 3. East only
 4. East or west
- 4-42. The area being photographed is what number of feet (a) long and (b) wide?
1. (a) 152,000 (b) 91,200
 2. (a) 262,000 (b) 92,400
 3. (a) 363,000 (b) 93,800
 4. (a) 462,000 (b) 94,600
- 4-43. What number of photographs is required per flight strip?
1. 59
 2. 60
 3. 64
 4. 66
- 4-44. What total number of flight strips is required?
1. 15
 2. 25
 3. 35
 4. 45
- 4-45. What total number of photographs is required?
1. 1,600
 2. 2,600
 3. 3,600
 4. 4,600
- 4-46. You should draw the flight lines what distance apart on the planning chart?
1. 1.13 inches
 2. 2.26 inches
 3. 3.72 inches
 4. 4.40 inches
- 4-47. What is the required interval between exposures, in seconds?
1. 1.1
 2. 2.3
 3. 3.5
 4. 4.7
- 4-48. What number of inches on the mosaic map represents 1,000 feet on the ground?
1. 0.70
 2. 0.90
 3. 1.10
 4. 1.30
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- Learning Objective: Identify procedures used to compose aerial photography.
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- 4-49. When shooting an aerial assignment, it is important for you to communicate with the pilot at which of the following times?
1. During preflight
 2. During flight
 3. During postflight
 4. Each of the above
- 4-50. When composing an aerial photograph, you have the most control over which of the following factors?
1. Subject placement
 2. Lighting
 3. The moment the picture is shot
 4. Camera-to-subject distance
- 4-51. What are the "picture areas" of a low-oblique photograph?
1. Foreground, target area, background, and sky
 2. Foreground, target area, and background
 3. Target area, background, and sky
- 4-52. When shooting a high-oblique aerial photograph, you should divide the image area into what number of sections to achieve proper composition?
1. One
 2. Two
 3. Three
 4. Four
- 4-53. Which of the following actions should you take to reduce image blurring caused by camera movement?
1. Have the pilot reduce the throttle
 2. Use a fast shutter speed
 3. Prevent your upper body and camera from touching the aircraft
 4. All of the above
- 4-54. Which of the following lenses should you select for taking an air-to-air photograph of an F-18?
1. 135mm
 2. 50mm
 3. 25mm
 4. 15mm